



# AFCTN Test Report 94-042

AFCTB-ID  
93-071



## Technical Publication Transfer

Using:



Rockwell International's Data



MIL-R-28002A (Raster)

Quick Short Test Report

12 July 1993



Prepared for  
Electronic Systems Center  
Air Force CALS Program Office  
HQ ESC/AV-2  
4027 Colonel Glenn Hwy Suite 300  
Dayton, OH 45431-1672

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## **1. Introduction**

### **1.1 Background**

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Rockwell International's interpretation and use of the CALS standards in transferring technical Raster data. Rockwell used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

## 2. Test Parameters

**Test Plan:** AFCTB 93-071

**Date of Evaluation:** 12 July 1993

**Evaluator:** George Elwood  
Air Force CALS Test Bed  
HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

**Data Originator:** John Armsby  
Rockwell International  
Tactical Systems Division  
1800 Satellite Blvd  
Duluth GA 30136  
(404) 476-6300

**Data Description:** Technical Manual Test  
1 Document Declaration file  
1 Raster file

**Data Source System:** 1840

<b>HARDWARE</b>	Unknown
<b>SOFTWARE</b>	Unknown

Raster

<b>HARDWARE</b>	Unknown
<b>SOFTWARE</b>	Unknown

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN Tapetool v1.2.10 UNIX

XSoft CAPS/CALS v40.4

PC 486/50

AFCTN Tapetool v1.2.10 DOS

**MIL-R-28002 (Raster)**

SUN SparcStation 2

Carberry CADLeaf Plus v3.1

AFCTN validg4

AFCTN calstb.475

IGES Data Analysis (IDA) IGESView v3.0

PC 486/50

AFCTN validg4

IDA IGESView Windows

Inset Systems HiJaak Window v1.0

**Standards**

**Tested:**

MIL-STD-1840A

MIL-R-28002A

### **3. 1840A Analysis**

#### **3.1 External Packaging**

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a commercial mailing bag. The exterior of the bag was not marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was not enclosed in a barrier bag or barrier sheet material, as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed a label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1.

#### **3.2 Transmission Envelope**

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### **3.2.1 Tape Formats**

The tape was run through the AFCTN *Tapetool* v1.2.10 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using the XSoft *CAPS read1840A* utility without any reported errors.

The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

##### **3.2.2 Declaration and Header Fields**

One error was found in the Document Declaration file. The *dstsys* record contained the value "NONE" which is not correct. MIL-STD-1840A requires a value other than "NONE" for this record. The value should have been "AFCTB" or some variation of this value.

dstsys: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid value for 'dstsys:'.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - The value for Destination  
System cannot be 'NONE'.

No errors were reported in the Raster header file.

The Document Declaration file in this tape does not meet the  
CALS MIL-STD-1840A requirements.

## 4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were  
included on this tape.

## 5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were  
included on this tape.

## 6. Raster Analysis

The tape contained one Raster file. This file was evalu-  
ated using the AFCTN *validg4* utility. This program reported  
that the file meets the CALS MIL-R-28002A specification.

The file was read into the AFCTN *calstb.475* viewing utility.  
No problems were noted.

The AFCTB has several tools for viewing Raster files. These  
tools are not used to generate a pass/fail but to report how  
commercially available software can handle the files. Many  
of these products are used in the development of technical  
publications and are good indicators of usability. The use  
of these products is not an endorsement nor an indication  
of CALS capability. All operations were performed using the  
default settings.

The Raster file was read into Carberry's *CADLeaf* software  
without a reported error. The images were displayed but not  
printed due to file size and network limitation.

The file was read into IDA's *IGESView* and *IGESView for Windows* without a reported error and printed.

The file was read into Inset Systems' *HiJaak for Windows* and printed without a reported error.

The Raster file was converted using Rosetta Technologies' *Prepare* without a reported error. The resulting file was read into Rosetta Technologies' *Preview*, displayed and printed.

The Raster file meets the CALS MIL-R-28002A specification.

## **7. CGM Analysis**

No Computer Graphics Metafile (CGM) files were included on this tape.

## **8. Conclusions and Recommendations**

The physical structure of the tape from Rockwell International meets the CALS MIL-STD-1840A requirements.

The Raster file meets the CALS MIL-R-28002A specification.

Because of the error in the Declaration file, the tape does not meet the CALS MIL-STD-1840A requirements.

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## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jul 12 12:00:44 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set002

Page: 1

File Name	File Type	Record		Selected/ Extracted
		Format/ Length	Block Length/Total	
D001	Document Declaration	D/00260	02048/000001	Extracted
D001R001	Raster	F/00128	02048/000041	Extracted

Catalog Process terminated normally.

---

## 9.2 Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jul 12 12:00:41 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

4

Label Identifier: VOL1  
Volume Identifier: CALS01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 4

HDR1D001                    CALS0100010001000000 93182 00000 000000

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier: CALS01  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0000  
Generation Version Number: 00  
Creation Date: 93182  
Expiration Date: 00000  
File Accessibility:  
Block Count: 000000  
Implementation Identifier:

HDR2D0204800260

00

Label Identifier: HDR2  
Recording Format: D  
Block Length: 02048  
Record Length: 00260  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

Number of data blocks read = 1.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001 CALS0100010001000000 93182 00000 000001

EOF2D0204800260

00

\*\*\*\*\* Tape Mark \*\*\*\*\*

HDR1D001R001 CALS0100010002000000 93182 00000 000000

HNR2F0204800128

00

Label Identifier: HDR2

---

Recording Format: F  
Block Length: 02048  
Record Length: 00128  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 41.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001R001            CALS0100010002000000 93182 00000 000041

Label Identifier: EOF1  
File Identifier: D001R001  
File Set Identifier: CALS01  
File Section Number: 0001  
File Sequence Number: 0002  
Generation Number: 0000  
Generation Version Number: 00  
Creation Date: 93182  
Expiration Date: 00000  
File Accessibility:  
Block Count: 000041  
Implementation Identifier:

EOF2F0204800128

00

Label Identifier: EOF2  
Recording Format: F  
Block Length: 02048  
Record Length: 00128  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume CALS01 #####

##### End Of Tape File Set #####

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

## 9.3 Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Mon Jul 12 12:00:45 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set002

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: ROCKWELL INTERNATIONAL TACTICAL SYSTEMS DIVISION, DULUTH GA. 30136

srcdocid: NONE

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19930701

dstsys: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid value for 'dstsys:'.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - The value for Destination

System cannot be 'NONE'.

dstdocid: NONE

dstrelid: NONE

dtetrn: 19930701

dlvacc: NONE

filcnt: R1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Product Data

docttl: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered  
in Document Declaration File D001.

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: 1234567891011121314151617181920

dstdocid: AGM-130

txtfilid: NONE

figid: NONE

srcgph: NONE  
doccls: UNCLASSIFIED  
rtype: 1  
rorient: 090,270  
rpelcnt: 004468,006860  
rdensty: 0200  
notes: NONE

Saving Raster Header File: D001R001\_HDR  
Saving Raster Data File: D001R001\_GR4

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

A total of 1 error(s), 0 warning(s), and 1 note(s) were  
encountered in Document D001.

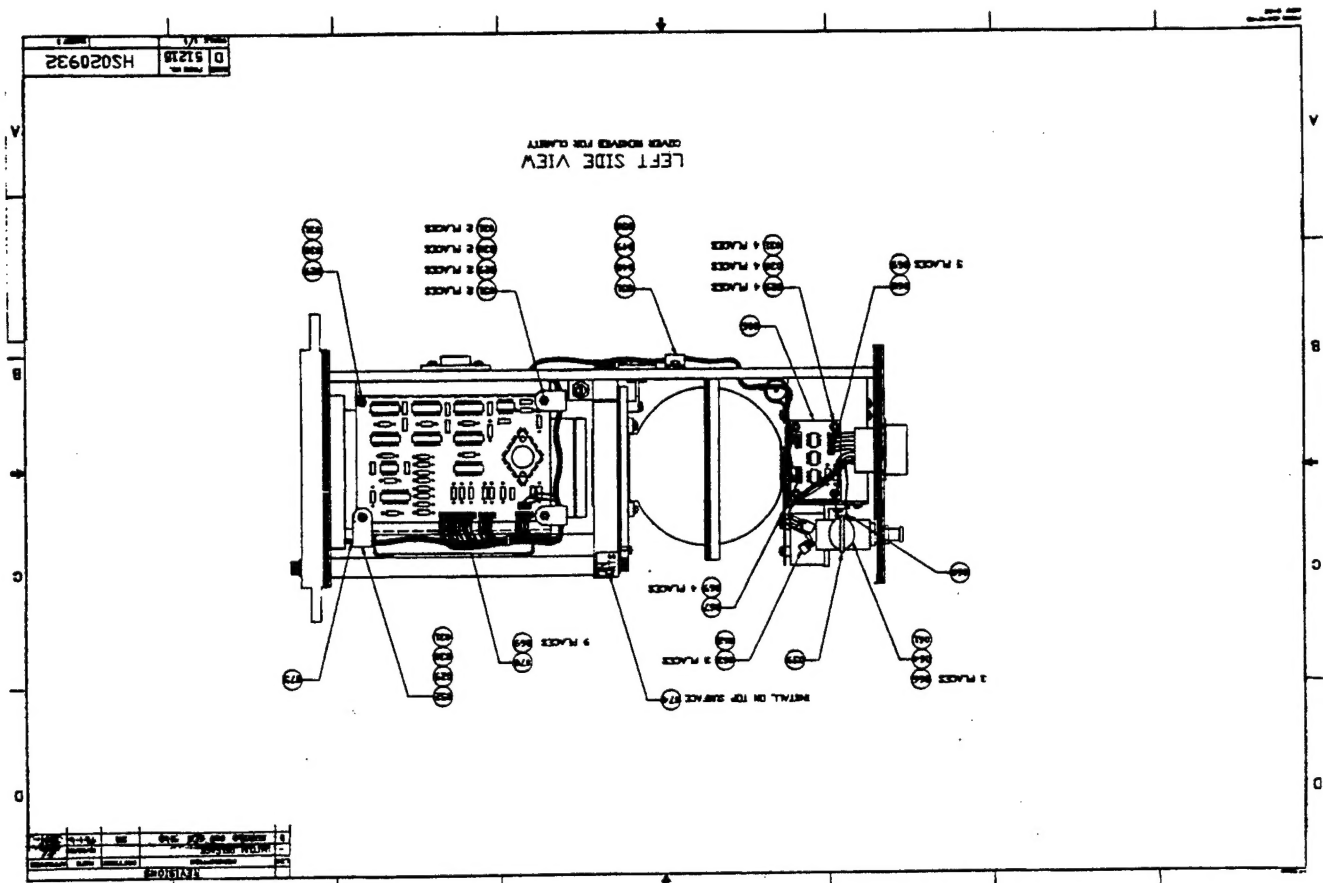
A grand total of 1 error(s), 0 warning(s), and 1 note(s) were  
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

### 10.1.1 Output HiJaak for Windows



## 10.1.2 Output IGESView



[illegible]